

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A vaporizer comprising:

a vaporizing chamber configured to vaporize a liquid material and thereby form a gas material;

a spray portion configured to spray the liquid material in the vaporizing chamber;

a delivery part configured to deliver the gas material from the vaporizing chamber to a gas outlet; and

a heating portion configured to heat the vaporizer,

wherein the delivery part comprises

a filter member covering the gas outlet and configured to allow the gas material to pass therethrough, and

a heat transfer member configured to transfer heat of the heating portion to the filter member,

wherein the heating portion and the filter member are separated from each other, and
the heat transfer member is disposed between the heating portion and the filter member and
supports the in thermal contact with the filter member at a position other than a peripheral
portion.

Claim 2 (Original): The vaporizer according to claim 1, further comprising a control member configured to control temperature of the heating portion based on temperature of the heat transfer member or the filter member.

Claim 3 (Original): The vaporizer according to claim 1, wherein the heat transfer member comprises a plurality of heat transfer members.

Claim 4 (Original): The vaporizer according to claim 1, further comprising a heater incorporated in the heat transfer member.

Claim 5 (Canceled).

Claim 6 (Currently Amended): A vaporizer comprising:
a vaporizing chamber configured to vaporize a liquid material and thereby form a gas material;
a spray portion configured to spray the liquid material in the vaporizing chamber;
a delivery part configured to deliver the gas material from the vaporizing chamber to a gas outlet; and
a heating portion configured to heat the vaporizer,
wherein the delivery part comprises
a filter member covering the gas outlet and configured to allow the gas material to pass therethrough, and
a shield plate covering the filter member on a side farther from the gas outlet,
wherein the filter member and the shield plate extend in a direction crossing a straight line connecting the spray portion and the gas outlet, and the shield plate is separated from the filter member and covers the filter member face to face and interposed between the vaporizing chamber and the filter member to prevent the gas material, which flows toward the gas outlet, from directly reaching the filter member while traveling in a straight path from the vaporizing chamber.

Claim 7 (Canceled).

Claim 8 (Currently Amended): The vaporizer according to claim 6, wherein a space is disposed ~~a gas passage heated is formed~~ between the filter member and the shield plate to form a heated gas passage for delivering ~~deliver~~ the gas material to the gas outlet.

Claim 9 (Original): The vaporizer according to claim 8, wherein a clearance is formed around the shield plate to allow the vaporizing chamber to communicate with the gas passage.

Claim 10 (Original): The vaporizer according to claim 8, wherein an opening is formed in the shield plate to allow the vaporizing chamber to communicate with the gas passage.

Claim 11 (Original): The vaporizer according to claim 10, wherein the opening comprises a slit, which is bent in a thickness direction of the shield plate.

Claim 12 (Original): The vaporizer according to claim 6, further comprising a control member configured to control temperature of the heating portion based on temperature of the filter member or the shield plate.

Claim 13 (Original): The vaporizer according to claim 12, wherein the temperature of the filter member or the shield plate is set at substantially the same as the temperature of the heating portion.

Claim 14 (Original): The vaporizer according to claim 12, further comprising a temperature sensor disposed at the shield plate, wherein the control member is configured to control the temperature of the heating portion based on a signal detected by the sensor.

Claim 15 (Original): The vaporizer according to claim 6, further comprising a heater incorporated in the shield plate.

Claim 16 (Original): The vaporizer according to claim 6, wherein the heating portion comprises a heater embedded in a wall of the vaporizing chamber.

Claim 17 (Currently Amended): A vaporizer comprising:
a vaporizing chamber configured to vaporize a liquid material and thereby form a gas material;
a spray portion configured to spray the liquid material in the vaporizing chamber;
a delivery part configured to deliver the gas material from the vaporizing chamber to a gas outlet; and
a heating portion configured to heat the vaporizer,
wherein the delivery part comprises
a plate member covering the gas outlet and a wall around the gas outlet, with a gap therebetween to form a communication clearance, such that a gas passage connecting the vaporizing chamber to the gas outlet is formed between the plate member and the wall,
a plurality of columns disposed in the gas passage to serve as a fluid baffle and to support the plate member, the columns extending from the wall around the gas outlet to the plate member, and
a heater configured to heat the gas material flowing through the gas passage.

Claim 18 (Original): The vaporizer according to claim 17, wherein the heater is embedded in the plate member.

Claim 19 (Currently Amended): The vaporizer according to claim 18, wherein the plate member has a surface facing and directly exposed to the vaporizing chamber and configured to serve as a vaporizing surface for vaporizing the liquid material.

Claim 20 (Original): The vaporizer according to claim 17, further comprising a heat transfer member configured to transfer heat of the heater to the plate member, wherein the heat transfer member is in thermal contact with the plate member at a position other than a peripheral portion.

Claim 21 (Original): The vaporizer according to claim 20, wherein the plurality of columns serve as the heat transfer member.

Claim 22 (Original): The vaporizer according to claim 17, further comprising a temperature control section configured to control temperature of the heating portion based on temperature of the plate member.

Claim 23 (Currently Amended): The vaporizer according to claim 17, further comprising a filter member ~~covering disposed between~~ the gas outlet and ~~the plate member~~ ~~and~~ configured to allow the gas material to pass therethrough ~~between the gas outlet and the plate member~~.

Claim 24 (Currently Amended): A vaporizer comprising:

a vaporizing chamber configured to vaporize a liquid material and thereby form a gas material;

a spray portion configured to spray the liquid material in the vaporizing chamber;

a delivery part configured to deliver the gas material from the vaporizing chamber to a gas outlet; and

a heating portion configured to heat the vaporizer,

wherein the delivery part comprises

a filter member, including a first planar surface, covering the gas outlet and configured to allow the gas material to pass therethrough,

a heat transfer member configured to transfer heat of the heating portion to the filter member, and

a shield plate, including a second planar surface facing the first planar surface, covering the filter member and located on a side farther from the gas outlet than the filter member is located,

wherein the shield plate is separated from the filter member and fixed to the heat transfer member along with the filter member via a spacer interposed between the shield plate and the filter member, such that the shield plate is set in thermal contact with the heating portion through the heat transfer member and the spacer to receive heat from the heating portion and interposed between the vaporizing chamber and the filter member to prevent the gas material, which flows toward the gas outlet, from directly reaching the filter member while traveling in a straight path from the vaporizing chamber.

Claim 25 (Original): An apparatus for performing a semiconductor process on a target substrate, the apparatus comprising:

a process chamber configured to accommodate the target substrate; and
a gas supply system configured to supply a process gas into the process chamber,
wherein the gas supply system comprises the vaporizer according to claim 1.

Claim 26 (Original): An apparatus for performing a semiconductor process on a target substrate, the apparatus comprising:

a process chamber configured to accommodate the target substrate; and
a gas supply system configured to supply a process gas into the process chamber,
wherein the gas supply system comprises the vaporizer according to claim 6.

Claim 27 (Original): An apparatus for performing a semiconductor process on a target substrate, the apparatus comprising:

a process chamber configured to accommodate the target substrate; and
a gas supply system configured to supply a process gas into the process chamber,
wherein the gas supply system comprises the vaporizer according to claim 17.

Claim 28 (Original): An apparatus for performing a semiconductor process on a target substrate, the apparatus comprising:

a process chamber configured to accommodate the target substrate; and
a gas supply system configured to supply a process gas into the process chamber,
wherein the gas supply system comprises the vaporizer according to claim 24.

Claim 29 (New): The vaporizer according to claim 1, wherein the filter member has a flat shape.

Claim 30 (New): The vaporizer according to claim 1, wherein the filter member has a curved shape.

Claim 31 (New): The vaporizer according to claim 1, wherein the heat transfer member is in thermal contact with the filter member at a position other than a peripheral portion.

Claim 32 (New): The vaporizer according to claim 6, wherein the filter member has a flat shape.

Claim 33 (New): The vaporizer according to claim 6, wherein the filter member has a curved shape.

Claim 34 (New): The vaporizer according to claim 6, wherein the shield plate is interposed between the vaporizing chamber and the filter member to prevent the gas material, which flows toward the gas outlet, from directly reaching the filter member while traveling in a straight path from the vaporizing chamber.

Claim 35 (New): The vaporizer according to claim 1, further comprising a shield plate covering the filter member and disposed farther from a gas outlet than is disposed the filter member.

Claim 36 (New): The vaporizer according to claim 17, further comprising a shield plate covering the filter member and disposed farther from a gas outlet than is disposed the filter member.

Claim 37 (New): The vaporizer according to claim 24, wherein the heat transfer member includes a portion in thermal contact with the filter member at a position other than a peripheral portion.